REMARKS

Status of Claims

Claim 1 is hereby amended to more particularly point out and distinctly claim that which applicants regard as their invention. No new matter is added by any of the amendments. Claims 1-5 and 7 are presented for further examination.

The Presently Claimed Invention

The present invention is an automotive window glass having a ceramic color layer thereon characterized by the following unique combination of properties. The ceramic color layer is formed on all or part of a surface of the window glass using a ceramic color paste containing a green-color pigment and a black-color pigment. The green-color pigment is present in an amount of from 60 to 80 wt-% based on the total weight of green-color and black-color pigments. The glass has a transmitted color value a* of -10.0 to 0.0 in an L*a*b* color system. The ceramic layer as observed from a vehicle exterior side through the glass has reflected color values of $L^* \leq 30.0$, $-10.0 \leq a^* \leq 0$, and $-2 \leq b^* \leq 8$ in the L*a*b* color system. The visible light transmittance of the ceramic layer is 0.3% or lower. And the ultraviolet light transmittance of the ceramic layer is 0.1% or lower. The applicant has surprisingly discovered that a vehicle window glass having this specific combination of properties has a distinctive aesthetic appeal in that the glass and ceramic layer blend harmoniously and avoid an uncomfortable visual reaction common to prior art window glass provided with a conventional black or dark gray ceramic color layer, while at the same time retaining sufficient opacity to conceal a bead of adhesive used to install the glass and protect the adhesive against deterioration due to light exposure. In fact, it was particularly surprising that it was possible to obtain sufficiently low visible light transmittance and UV transmittance using a green-color dye, as the conventional wisdom was that only a black or dark gray ceramic layer would be sufficiently opaque.

Prior Art Rejections

The rejection of claims 1-3, 5 and 7 under 35 U.S.C. § 102(b) or 103(a) over Hayakawa et al., U.S. 5,421,877 and the rejection of claim 4 under 35 U.S.C. § 103(a) over Hayakawa et al. in view of Ubuichi et al., JP 11/228177A are each respectfully traversed.

With regard to the rejection under 35 U.S.C. § 102(b), applicant wishes to point out that Hayakawa et al. does not describe any automotive window glass with a ceramic color layer having the specific combination of properties required by applicant's claims. Indeed, the office action effectively concedes as much by admitting that it would be necessary for a skilled worker to engage in experimentation to optimize the properties of the Hayakawa et al. window glass in order to arrive at a window glass with the claimed properties. Accordingly, Hayakawa et al. cannot fairly be said to anticipate the presently claimed invention.

As for the assertion that it would have been obvious to produce a window glass having the claimed properties by routine optimization of the Hayakawa et al. window glass, applicant respectfully disagrees. Optimization presupposes an understanding of the object or goal to be achieved. Neither Hayakawa et al. nor any other art of record evidences any awareness or appreciation of the aesthetic problem of an uncomfortable visual effect to be solved by a vehicle window glass with a ceramic color layer having the claimed properties. Hayakawa et al. is concerned with producing a vehicle window glass with a ceramic color layer which exhibits good releasability from a bending press mold. Hayakawa et al. achieve this goal by using a ceramic color composition comprising a first and second inorganic pigments having differing average particle sizes ranging from 0.1 to 1.5 μm and from 2 to 50 μm, respectively. With respect to color, Hayakawa et al. are only concerned that the ceramic coating be sufficiently opaque to protect the adhesive and conceal parts such as heating strip terminals. Because these concerns are fully satisfied by the conventional black ceramic coatings described, Hayakaya et al. have no need to optimize color effects.

After the fact, it is always easy to assert that a person of ordinary skill would optimize the properties of the ceramic layer. But unless one skilled in the art has in mind some goal he wants to achieve, there is no way he can optimize the properties of the vehicle window glass to achieve it. It is only the applicant who has discovered the aesthetic considerations which lead to the present invention. Absent any understanding of the aesthetic problem solved by the present invention, one of ordinary skill in the art has no motivation to "optimize" color to solve such a problem, much less any understanding of how the color should be adjusted to solve the problem. Thus, a *prima facie* case of obviousness is not made out by Hayakawa et al. because there is no rational basis for the purported "optimization" needed to obtain a vehicle window glass with the specifically claimed combination of properties.

As pointed out in Table 1 of the specification and Examples 1-5, the inventor has surprisingly found that a ceramic color layer having a preferable color tone (i.e. "black green" or "deep green") for an automotive window glass is obtained while maintaining visible light transmittance and ultraviolet transmittance at essentially 0.0%. The specification explains that the presently claimed color layer functions to conceal heat ray terminals, trim members and the like from a vehicle exterior, and because the inclusion of a green pigment would lower black pigment content which could adversely affect the concealing function, a person of ordinary skill in the art would not think to use a mixture containing such a large concentration of green pigment. (See paragraphs [0003] and [0006]). The inventor has unexpectedly found that even using a concentration as high as 80 wt% of green pigment leads to the same 0.0% light transmittance as obtained when using a 100 wt% black-color pigment.

In contrast to the presently claimed invention, Hayakawa does not disclose any actual automobile glass with any color tone other than black or gray. (See Table 1 of Hayakawa). Automotive window glass with a black or gray tone is not desirable because it results in an uncomfortable feeling. (see paragraph [0006] of the specification). Additionally, Hayakawa does not suggest using a

high concentration of green-pigment to create an automotive glass with a desirable color tone. One of ordinary skill in the art would not have any motivation to attempt to make a ceramic color layer with as high a concentration of green-color pigment as presently claimed.

Furthermore, the inventor has unexpectedly discovered that the color tones of Examples 1-5 ("black green" and "deep green" as in Table 1) result in superior color tones for automotive window glass. In terms of a reflected color of the ceramic color layer, which is observed from a vehicle exterior side through the glass in a L*a*b* color system, claim 1 defines the resulting value ranges of a* ($-10.0 \leq a^* \leq 0$) and b* ($-2 \leq b^* \leq 8$). The a* value of Comparative Example 1 is 0.5, which clearly falls outside of the claimed range, and the b* value of Comparative Example 2 is −2.81, which also clearly falls outside of the claimed range. The color tones disclosed in Hayakawa correspond to the color tones of Comparative Example 1 (black color), which indicates that the reference is clearly excluded from the claimed invention. Therefore, the claimed invention is not obtainable through routine experimentation based on Hayakawa.

In addition, the green-color pigment must be present in an amount of from 60 to 80 wt%, relative to 100 wt% of the total of the black and green color pigments. Consequently, the black-color pigment is only present at a concentration of from 20 to 40 wt%. In other words, the green-color pigment is the major pigment, and the black-color pigment is the minor pigment. The inventor has unexpectedly discovered that even though the green-color pigment was used as a major pigment in Example 2 (40 wt% black and 60 wt% green) to Example 5 (20 wt% black and 80 wt% green) of the specification, the resulting visible light transmittance and ultraviolet transmittance was still 0.0%. This is in stark contrast with the inferior ceramic color layer of Comparative Example 3 (100 wt% green), which has a visible light transmittance of 1.5% and a ultraviolet transmittance of 0.1%. A person of ordinary skill in the art, looking at Hayakawa for guidance, would have no motivation to use a green-color

pigment as a major pigment in the ceramic color layer, especially to use a concentration of 80 wt% green-color pigment.

With regard to the rejection of claim 4 over the combination of Hayakawa et al. and Ubuichi et al., applicant notes that Ubuichi et al. is merely cited to show a black pigment of CuO-MnO-Cr_2O_3, but Ubuichi et al. does not rectify the failure of Hayakawa to disclose or suggest a vehicle window glass with a ceramic color layer having the specific combination of properties required by applicant's claims. Thus, claim 4 should be patentable with parent claim 1.

Accordingly, reconsideration and withdrawal of the prior art rejections are respectfully requested.

Conclusion

In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned at (202) 624-2845 would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323, Docket No. 038788.57892US.

Respectfully submitted,

October 7, 2010

J. D. Evans
Registration No. 26,269

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
JDE:moi *(doc. #13440987)*